

MODEL DSC7500(H)
HORIZONTAL SWING - CRASH BEAM BARRIER SYSTEM
HYDRAULIC POWERED

SYNOPSIS

- The Series DSC7500 Horizontal Swing - Crash Beam Barrier System incorporates a special high strength alloy steel beam. The strength to weight ratio of the beam makes it highly effective as either a manual Barrier, DSC7500(M) or as a powered Barrier system, DSC7500(H).
- The Series DSC7500(H) Barrier System has been tested in full scale configuration in accordance with the Department of State *Certification Standard Test Method for Vehicle Crash Testing of Perimeter Barriers and Gates*, SD-STD-02.01, Revision A, March 2003. The U.S. Department of State Certified rating is K12.
- The DSC7500 has been tested to the United Kingdom BSI Standard PAS:68 2007 Crash Test. 7.5 Tonne EU truck at 80 kph. Zero penetration. The beam held and was wedged in place. Second attack readiness demonstrated. Passed Test.
- The DSC7500(H) incorporates a hydraulic locking device that locks each Crash Beam in its guard position. With the Crash Beam in the full guard position, a locking bolt is hydraulically positioned locking it in place. To open the Crash Beam, hydraulic pressure must be applied to the locking device.
- The DSC7500(H) is operated remotely by means of an integral Hydraulic Pumping Unit (HPU). The HPU can be powered from a local single or three phase power source.
- Alternatively the DSC7500(H) can be powered and operated automatically from a Battery Powered HPU. The Battery Powered HPU can be maintained at operating power level by a Solar Array or by low power alternative sources.
- DELTA has been manufacturing Deployable Arm Barrier Systems for over 15 years and has more than 3,000 in service worldwide. These include fully automated and manual systems.
- A complete range of Prime Movers, Control Options, Interface Packages, Sensors, Signal Lights, Safety Provisions etc. is available.
- DSC7500 CRASH CERTIFIED HORIZONTAL SWING - CRASH BEAM BARRIER SYSTEMS are manufactured by DELTA under an exclusively license of U.S. Patent Number 4,844,653.

1.0 SCOPE

- 1.1 This specification defines the procurement of a hydraulically operated CRASH CERTIFIED HORIZONTAL SWING - CRASH BEAM BARRIER SYSTEM, Model DSC7500(H). The system consists of a crash beam, hinge assembly, hinge end support buttress and the hydraulic actuator, receiving buttress, power unit, hydraulic locking device, mounting hardware and other options as defined herein.

2.0 BARRIER CONFIGURATION

- 2.1 Barrier Construction. Barrier shall be an above grade assembly containing a Crash Beam hinged at one end, which can be rotated hydraulically. A hydraulic locking device will keep the Crash Beam in the closed position.
- 2.2 ACTUATION. The Crash Beam shall be swung open or closed, and locked by means of hydraulic cylinders driven by a Hydraulic Power Unit.
- 2.3 CONTROL. The Barricade shall be controlled from a push button control station mounted either on the Barrier or carried at the end of a 15 foot (4,6 M) umbilical cord.
- 2.4 Barrier Height. Height of the Barrier shall nominally be 34 inches (0,86 M) as measured from the roadway surface to the centerline of the crash beam. Height can be varied during installation to suit local security requirements.
- 2.5 Barrier Clear Opening. The standard clear opening shall be 144 inches (3,66 M) as measured inside to inside of the hinge and locking buttress. The Barrier can be specified with a clear opening up to 360 inches [9,14 M].
- 2.6 Finish. The foundation base of the Barrier shall be asphalt emulsion coated for corrosion protection. Exposed barrier surfaces shall be painted with a gloss white, two-part epoxy high weather resistant paint (or optional galvanized finish). The swing arm beam shall be furnished with red reflective tape sufficient to provide alternate 20 inch (0,5 M) bands.

3.0 HYDRAULIC POWER UNIT

- 3.1 Hydraulic Circuit. Circuit shall incorporate the design concepts as described by US Patent # 4,490,068. Unit shall consist of an electrically driven hydraulic pump, which shall pressurize a high-pressure manifold connected to a hydraulic accumulator. Electrically actuated valves shall be installed on the manifold to allow oil to be directed to the hydraulic cylinders to swing open or close, and lock or unlock the Crash Beam.

- 3.2 Main Power. The electric motor driving the hydraulic pump shall be fed from (specify actual site voltage, phase and frequency (i.e. 230/3/60). Motor shall be sufficiently sized for the expected number of Barricade operations.
- 3.3 Manual Operation. A hand pump shall be furnished to allow the Barriers to be locked and unlocked manually in the event of a power interruption. Once the locking device is in the unlocked position the hydraulic cylinder can be temporarily removed from the Barrier System, allowing the crash beam to be swung open or closed manually.
- 3.4 Hydraulic Locking Device. The Barrier System shall be provided with a hydraulically operated locking device. A locking bolt will lock the Crash Beam in the closed or guard position.

4.0 CONTROL AND LOGIC CIRCUITS

- 4.1 Standard Control Station: A standard control station shall be supplied to control the Barrier operation. This station shall have a key lockable main switch. Buttons to raise or lower the Barrier shall be provided. The control station shall be furnished with a umbilical cord for firmly mounting to the Hydraulic Power Unit or other structure within 15 feet of the Power Unit, or it can be 'hand' carried for inspection duties. (Alternatively the Standard Control Station can be hard wired and mounted within 150 feet of the Hydraulic Power Unit – interconnect cable not included)
- 4.2 CONFIGURATION OPTIONS. A wide range of options such as Prime Movers, Control Options, Interface Packages, Sensors, Signal Lights, Safety Provisions etc. is available. These include the following:
 - 4.2.1 Hydraulic Power Unit – Multiple Barriers. The HPU shall be configured to operate two (three), (or four) Horizontal Swing - Crash Beam Barriers.
 - 4.2.2 Remote Location (HPU). The HPU for the Horizontal Swing -Crash Beam Barrier(s) shall be located at a point remote from the Barrier(s).
 - 4.2.3 Battery Powered Hydraulic Power Unit (BHPU). The BHPU shall by configured to operate one, (two), (three), (or four) Horizontal Swing - Crash Beam Barriers.
 - 4.2.4 Control Circuits. A control circuit shall be provided to interface between one, (two), (three), (or four) Horizontal Swing - Crash Beam Barrier control station(s), HPU (BHPU), timers, relays and other devices necessary for the Barrier operation.

- 4.2.5 Remote Control Panels – Master and Slave. Master and Slave(s) panels shall be provided to operate the Barrier(s) from a single (or multiple) location(s).
- 4.2.6 Weather Resistant HPU Enclosure. A lockable weather resistant enclosure shall be provided for the HPU. The design shall provide for easy access to the HPU for maintenance and emergency operation of the hydraulic system.
- 4.2.7 Heavy Duty Weather Resistant HPU Enclosure. A lockable weather resistant enclosure shall be provided for the HPU fabricated from not less than 0.25 inch [6,35 mm] steel plate. The design shall provide for easy access to the HPU for maintenance and emergency operation of the hydraulic system.

5.0 EXPERIENCE AND CERTIFICATION

- 5.1 Experience. Barrier and auxiliary equipment shall be of a proven design. Manufacturer shall have 15 years documented experience with similar vehicle Barriers.
- 5.2 Qualification Tests. The Model DS7500 Barrier System has have been tested in full scale configuration in accordance with the Department of State *Certification Standard Test Method for Vehicle Crash Testing of Perimeter Barriers and Gates*, SD-STD-02.01, Revision A, March 2003. It shall have a Certified rating of K12.

6.0 QUALITY ASSURANCE PROVISIONS

- 6.1 Testing. Upon completion, the Barrier system will be fully function tested in the manufacturer's shop. The following additional checks shall be made:
 - 6.1.1 Identification. A nameplate with manufacturer's name, model number, serial number and year built shall be located at the hinged end structure.
 - 6.1.2 Workmanship. The Barrier shall have a neat and workmanlike appearance.
 - 6.1.3 Dimensions. Principle dimensions shall be checked against drawings and ordering information.
 - 6.1.4 Finish. Coatings shall be checked against ordering information and shall be workmanlike in appearance.

7.0 SHIPPING AND CRATING

- 7.1 The Barrier system shall be crated or mounted on skids as necessary to prevent damage from handling. The shipping container(s) shall be of sufficient structural integrity to enable the assembly to be lifted and transported by overhead crane or forklift without failure.

8.0 DISCLAIMER

- 8.1 Please note - careful consideration must be devoted to the selection, placement and design of a Horizontal Swing - Crash Beam Barrier System installation. Just as in the case of any Barricade system, perimeter security device or security gate that blocks a roadway or drive, care must be taken to ensure that approaching vehicle as well as pedestrians are fully aware of the Barriers and their operation. Proper illumination, clearly worded warning signs, auxiliary devices such as semaphore gates, stop-go signal lights, audible warning devices, speed bumps, flashing lights, beacons, etc. should be considered. Delta has information available on many such auxiliary safety equipment not specifically listed herein. It is strongly recommended that an architect and or a traffic and or safety engineer be consulted prior to installation of a Barricade system. Delta will offer all possible assistance in designing the operating equipment, controls and the overall system but we are not qualified nor do we purport to offer either traffic or safety engineering information.

9.0 PROCUREMENT SOURCE

- 9.1 The **Model DSC7500(H)** Horizontal Swing – Crash Beam Barrier System shall be purchased from:

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